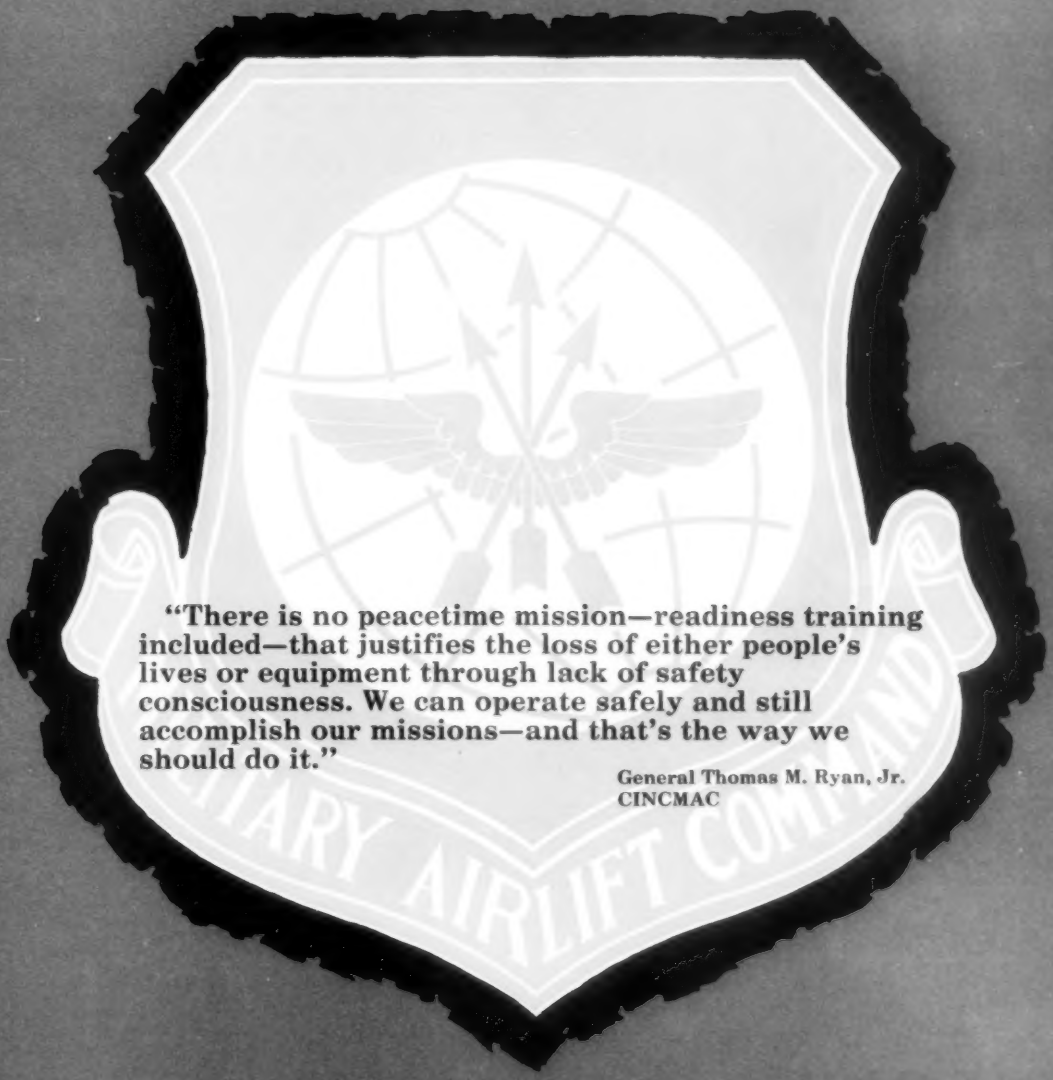
THE MAC Flyer

MARCH 1984



"There is no peacetime mission—readiness training included—that justifies the loss of either people's lives or equipment through lack of safety consciousness. We can operate safely and still accomplish our missions—and that's the way we should do it."

General Thomas M. Ryan, Jr.
CINCMAC

THE MAC Flyer

For Greater Safety in MAC Air Operations

MARCH 1984 MACRP 127-5 VOL XXXI NO. 3

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The Deadline Cometh

"To be, or not to be: that is the question:
Whether 'tis nobler in the mind to suffer
The slings and arrows of outrageous fortune,
Or to take arms against a sea of troubles,
And by opposing end them?"

Hamlet III, i

Harboring a grudge against the dastardly publishers who failed to turn your cherished manuscript into a best-seller? Up to your neck in rejection notices? Choking on their words, "don't call us, we'll call you"?

Worry no longer, MAC fliers and highly esteemed airpersons. You've just tuned to the alternative solution. (Don't adjust your mindset. We control the horizontal and we control the vertical.) Yes, it's those fiendishly handsome military editors in search of the long hidden grail, your perfect manuscript. Yes, it's the opportunity of a lifetime. And yes, it's your last chance to enter the 1984 MAC Flying Safety Writing Contest as you choose "to be or not to be."

The goal: to promote flying safety in the Military Airlift Command.

The vehicle: your contest entry of poetry or prose with an aviation safety message.

The deadline: 31 March 1984 ('tis true, 'tis true).

The reward: the satisfaction that your story may save a life one day.

We also feature some very tangible incentives merely for entering and following the rules:

(a) a free one-year subscription to *TMF* and,

(b) a C.R. Terror T-shirt (rare and priceless, and fashioned of genuine simulated cotton and polyester cloth).

If your entry is selected as one of our nine honorable mention winners, you'll receive an engraved wall plaque. First, second and third-place winners receive handsome desk sets.

So do the deed today and cease drowning in your sea of troubles. The deadline, 31 March 1984, cometh for every aspiring *TMF* writer.

"Come, give us a taste of your quality."

Hamlet II, ii

The Rules

The 1984 MAC Flying Safety Writing Contest is conducted according to MACR 900-3 and these rules. All entries must be original, unpublished and postmarked no later than 31 March 1984. Stories must be between 1,000 and 3,000 words long (about 6 to 14 double-spaced typed pages); poetry should be about 75 to 100 lines. Entries must contain an *aviation safety/mishap prevention message.* Manuscripts must be double-space typed and submitted in *two copies.* Identify entries by title only and attach a cover sheet showing the author's name, address, duty phone number and unit. Also, the cover sheet should contain a brief autobiography.

The contest is open to anyone. Entries qualifying under the above rules earn their author a free C.R. Terror T-shirt (*so indicate your size*) and a free 1-year subscription to *The MAC Flyer.* However, contest prizes (desk sets and plaques) may only be awarded to military members and civilian employees of the Department of the Air Force or Air Reserve Forces. Other entrants may be selected for Honorable Mention in a Special Category. All winning stories will be published in *The MAC Flyer.* Entries should be addressed to:

Safety Writing Contest
HQ MAC/IGFE
Scott AFB, IL 62225

General Thomas M. Ryan, Jr.

Interview by Maj. James M. Lee
Supervising Editor

TMF— Sir, based on your experience both in MAC and in other major commands and headquarters, how do you think MAC's mishap prevention efforts measure up when compared with the other Air Force commands?

General Ryan— I think they measure up very well! From the standpoint of results, 1983 was an outstanding year, the best we've had, and the lowest in the Air Force as far as Class-A mishap rates were concerned. On the other hand, I think that the same thing could be said of MAC that could be said of any other command and that is that we could do a lot more.

TMF— What are your goals for flying safety in MAC?

General Ryan— Obviously the goal would be no mishaps, but that has generally proven to be unrealistic. Mishaps are going to happen, and it's always disappointing when a mishap happens and it could have been prevented. It's even more disappointing when you look back at a period of time and begin to realize that you weren't paying enough attention to a particular area, placing enough emphasis on the right things. As a result, a mind-set or a set of circumstances has developed to the point where it's just a question of time before those hazards cause a mishap.

TMF— What role do you feel supervisors play in mishap prevention?

General Ryan— I think they probably play the *key* role in mishap prevention. I think that's true particularly in the flying game, although I'm sure it applies in almost any area where safety is a concern. Operating machines and airplanes is a good example. The operator is under a great deal of pressure to perform his or her mission well, and it's all too easy to let that mission orientation drive other thoughts away. Perhaps it would lead that pilot or mechanic to take chances they wouldn't think of if they were considering that same set of circumstances in a more leisurely, calm and detached environment.

The roles of the supervisor and the commander, then, are clearly to pay attention to what's going on and to be sensitive and attuned to the pressures that their aircrews are feeling—for that matter, everybody associated with the flying operations. That's why we put the supervisors there in that position, to capitalize on their ability and experience. Based on that ability and experience, they must backstop the aircrews, try to anticipate those missions and those periods of time during which their people are going to be under a great deal of pressure, and be the voice that says, "remember to do it safely."

TMF— What do you think are some of the factors that motivate MAC aircrews to fly safely?

Talks About Safety

General Ryan— To me the single greatest motivator is the conviction on the part of MAC aircrews—and I really believe that they have this conviction—that to do their job in a professional manner is the hallmark of being a MAC crewmember. In my observations of flying the system and talking to aircrews, they take great pride in the fact we do things in a professional manner. You just don't see "hot dogging" out there. I've been around a long time and I sense a great deal of professionalism in our aircrews and in our maintenance people. They demonstrate that they really do believe it's important to do things right, to do them by the book and yet to do them in such a way that the mission gets done and gets done safely.

TMF— During 1982, MAC experienced the highest DOD Class-A mishap rate since 1978. Our Class-A mishap rate in 1983 was dramatically improved, in fact, the best in the command's history. What can we do to ensure this trend continues in 1984 and beyond?

General Ryan— I think we need to continue to look at not just the mishaps themselves and at what happened, but also at all the circumstances that led up to them. We need to extrapolate those circumstances into necessary changes in policies and programs. Changes particularly reemphasizing some of the basics.

I recently sent a letter to our commanders, for example, on the subject of unilateral training—the very basic training that occurs right at the homedrome and involves hands-on experience flying the airplanes. I think that reemphasis was necessary. There's always a tendency out there for any commander to put the airlift mission—meeting those schedules and putting his aircraft against requirements—ahead of training. We can't allow that pressure to override the basic need for training and the fact that our primary mission is to train not just the aircrews, but the entire MAC system to be ready to go to war. As a very fortunate byproduct of that training effort, we produce airlift which is then a commodity of great economic value and one that we can apply against DOD requirements.

But it's easy to get the cart before the horse and to allow the production of airlift to overshadow the basic need for training. We need to keep our priorities straight. If we're not giving more than minimum training to every single aircrew day in and day out, every month and every year, then we're not doing our jobs. So while you can draw conclusions from the fact that you did or did not fly your training hour allocation, that doesn't always provide the whole story. You have to look all the way down to the squadron level and make sure that every individual had an opportunity to get the proper amounts and kinds of training.

Also I think a lot could be learned from other areas. Everytime something goes wrong with an airplane, even though it might not be inflight, for example, there's a potential for learning a lesson. Someone will go out and repair the aircraft or fix the malfunction without going through the thought process: what if that had happened in flight, and secondly, is there a lesson to be learned here. We need to pursue that.

TMF— Reflecting on the Grenada rescue operation, how well did our basic flight safety philosophy and procedures work in an actual contingency?

General Ryan— I thought they worked very, very well. Any actual contingency always

provides someone the opportunity to turn into a "John Wayne." You know the adrenaline flows, people get charged up. They're struck with the realization that "this is for real. We're actually going to go out and do something. This is not training. This is not a routine peacetime mission. The eyes of the nation are focused on us." Sometimes that can lead people to take risks which are not only unwarranted, but which can be self-defeating to the success of the operation itself.

I was particularly proud of our people in operation Urgent Fury because they not only performed the mission with a real touch of class, they accomplished every aspect of that mission in an outstanding manner. But on two or three significant occasions, and I'm sure there were many, many more of which I'm not personally aware, they avoided potentially disastrous situations through the application of sound judgment, professional performance of their individual jobs and good aircrew discipline.

TMF— Reference the Grenada operation, are there areas that require our attention?

General Ryan— Oh, I think so! And we've gone about that in a fairly structured way. We've had two or three sessions, one of which tended to be an all-encompassing session and was held last December—lessons learned in Urgent Fury. We brought in the wing commanders of the organizations who were responsible for significant portions of the operation out in the field. We also included the MAC staff and together we reviewed the operation from every angle we could think of and gave everybody involved an opportunity to express their views as to how things went. We identified a number of action items as a result of that.

One of the most significant was that we really have to improve—and this comes as no surprise to us or anyone else, but was graphically demonstrated in Grenada—our C^3 capability. We need the ability to talk to all elements of the airlift system, communicate with them verbally and more importantly in text, and in some cases secure. We just can't overemphasize the need for that. A dearth of information was certainly the case in

many portions of Urgent Fury, and we've got to fix that.

TMF— With MAC participating in numerous JCS-directed and coordinated exercises yearly, what are the keys to enhanced safety in these exercises?

General Ryan— I think we've already discussed them. The joint exercise program, as you may know, is growing. There has been an increase in the overall scope of the program every year for probably the last seven or eight. This year there is a significant increase in the number of flying hours involved. While there are only two more joint exercises this year than there were last year, if you compare the flying hours involved, there are obviously more field training exercises. Those that we are participating in are of a greater scope than they were last year because there is a significant increase in that activity.

Joint exercises serve many purposes as most of your readers know. They obviously serve the primary purpose of exercising the forces of different services together in a simulated combat environment. But they also provide the ideal opportunity to train individuals and to train subsets of organizations like ALCEs, parts of mobile aerial ports and maintenance recovery teams.

Also the goals are hopefully defined more clearly in a joint exercise. The people involved know what it is that they are trying to accomplish. That goal is more specialized, more unique than the goals present in the

day-to-day operation. So it's a grand opportunity to see how well you can do under a realistic and stressful situation where there are a lot of eyes watching you. Our people have traditionally done outstandingly well and I expect them to continue.

TMF— Our MAC helicopter units recorded five DOD Class-A mishaps in 1982. Yet in 1983 they recorded none. Were there specific initiatives that made this happen?

General Ryan— Absolutely! As a matter of fact, 1983 was the first year since 1960 that the Air Force has not had a major helicopter mishap. That's 23 years and I consider that quite an accomplishment. And that did not happen by accident. It happened, in my view, because of the efforts of a lot of people—most importantly the direct involvement of the commander of the 23rd Air Force, General Mall, his staff and the commanders of units within 23rd AF that operate rotary wing aircraft.

They took a very common sense approach to the problem. Because 1982 was not a good year for helicopter operations, they asked themselves, at a great level of detail down to the grass roots, "what is it that we're not doing? What aspects of our operation constitute the greatest hazards to helicopter operations? And what can we do to fix them?"

They got maintenance people involved. They got airspace managers involved and they obviously got aircrews involved—and operations officers and squadron commanders. They got the people who are on the scene actually operating the equipment under all kinds of conditions from the local training mission on a bright sunny day at Kirtland, to that actual SAR mission going down in the middle of a snowstorm and in the middle of the night.

SAR missions are probably some of the most hazardous operations that we conduct in the Air Force because, to some extent, we operate beyond the realm of normal peacetime safety rules. In those operations that obviously involve the risking of life, there's a greater pressure to succeed than there would be, say in an exercise situation. Obviously you can always back off in an exercise and do it another day. But if you don't save that survivor now, it isn't going to get done.

As I said, they looked at those factors that impact our operations and as a result of that, they've made a lot of discoveries. As a result of those discoveries, 23rd AF commanders took a whole host of actions and I think that probably generated a great awareness in the minds of the people who operate our helicopters. And the results speak for themselves. I'm very proud of our 23rd AF and our SOF/rescue operations.

Photos by Mr. Robert Dedee, Det 1, 1361 AAVS.

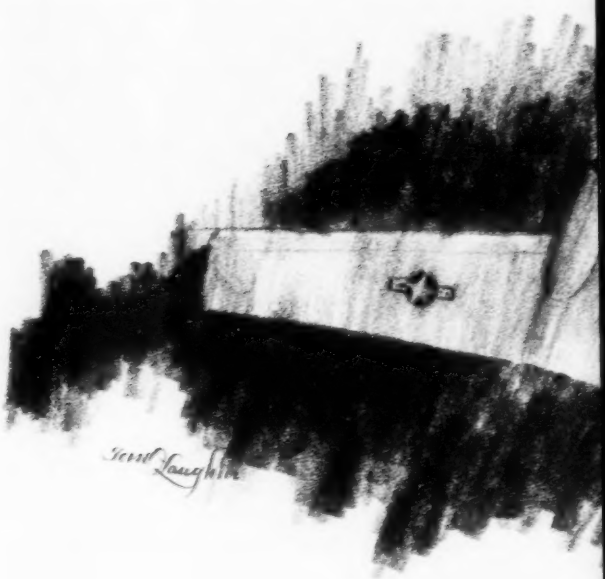
TMF— Are there any final comments you'd like to make, Sir?

General Ryan— Only to say that in the eight months that I've been back in MAC I am, once more tremendously impressed with the professionalism of our people and their sincere desire to do things in a safe and professional manner. It falls to my lot to accept personally the kudos, the congratulations, the good wishes—and they have been legion—from every level of leadership in our government! I'd just like to take this opportunity to pass on those kudos, good words, well wishes and congratulations to the people who actually made it happen.

TMF— Thank you, General Ryan. ✭

Inattention puts a Starlifter crew in...

by Maj. Edward M. Duchnowski
446 MAW (Assoc)
McChord AFB, Washington



The young lieutenant in pilot scheduling sat with his feet up on the desk. It's 1400 and all's well, he thought. Everything is set for tomorrow. In a few hours I can head home and spend a cozy evening with Ellen in front of the fire watching "On Golden Pond" on the new video recorder. Not a bad way to go. Glad I volunteered for this pilot scheduler job. Gives me more time at home with Ellen. Joe's reverie was interrupted by the harsh ring of the phone. "Pilot section, Lieutenant Hansen."

"Joe, Colonel Smith."

Uh, oh. The ops officer. Wonder what's up now, thought Joe.

"Yes, sir?" he answered.

"Joe, I just got a call from current ops and 39026 is back in commission. They want to know if we can man it for a four hour local tonight. Figure on an 1800 go. Can you handle it?"

Joe groaned inwardly. He'd already released all the pilots when the evening local cancelled earlier. Now he would have to start from scratch. Even so, he had to give it his best shot. After all, Colonel Mike Smith was a nice guy and Joe wanted to look good as the "new kid on the block" in scheduling. "Heck, no problem sir. We'll find some folks."

As he hung up, Joe remembered that he himself was due a "composite" check. It had already been a long day, but so what? If he could find an examiner and another copilot, he'd be "in like flynn." Just then, as if they had materialized from a "transporter," Maj. "Easy Sam" Durman appeared along with Lt. Ed Spring. After a brief explanation and a little of the fabrication all pilot schedulers are famous for, Joe managed to convince the pair they were the "only ones available" and the mission was set. A quick call to the ops officer to relay the good news, a call to Ellen telling her he wouldn't be home till midnight, and Joe was off and rolling.

It was now 1930. The big transport was at 2,000 feet in the rain and soup near Baine Field. Flaps were at approach and approach control had them on PAR downwind. Joe was halfway through his check and Major Durman in the right seat wasn't exactly impressed. First had been the wrong turn entering holding. Then came calling for "gear up" before "flaps approach" on the three-engine go around, followed by not knowing the correct go-around EPR and almost overboosting the

Honorable Mention, 1983 MAC Flying Safety Writing Contest

Deep Trouble

engines. On top of that, the kid's overall aircraft control was lousy, reflected Durman. Every time he deploys flaps we gain 200 feet. Well, let's just see how well he handles the rest of the checkride. At that point, the major looked across the cockpit to watch the young lieutenant attempt to smooth out his erratic aircraft control.

In the left seat, Joe was getting more and more upset with himself. Blast it! My aircraft control is terrible tonight. Must be this lousy chop. Oh cripes, there I am again - 200 feet high and going higher. Trim down you jerk! Joe gave it a few clicks of nose-down trim and initially arrested his climb. But the aircraft did not transition to a descent and Joe pushed hard against the yoke in a struggle to return to the proper altitude. By then, Durman was getting more and more

They were fully stalled

disgusted. What does he need to happen before he realizes he's off his altitude again?

Inoperative trim, Joe thought to himself as he mentally reviewed his options. The first thing he thought of was to use manual hydraulic to attempt to trim down. Joe grabbed frantically for the manual lever while using every muscle in his left arm to hold the yoke forward. Even so, the altitude was now 400 feet high and the airspeed was decreasing.

Maybe the electric will work. The manual hydraulic doesn't seem to be having any effect, Joe mumbled to himself. He lunged for the electric switches and pushed hard on them but nothing seemed to happen. His left arm started to shake from the intense forward pressure he was applying to the yoke. As he glanced back to the instruments, he was astonished to see 25° nose up and 100 knots airspeed. Then it hit him. "Runaway

trim!" he screamed, mashing the disconnect button frantically. Just as the aircraft began to buffet, Joe felt the icy feeling of panic begin to set in, and as a last resort, he took both hands and shoved the yoke forward to the panel. My God, we're in a deep stall and my IP at Altus said that recovery from a deep stall is impossible! We're going to buy the farm! These thoughts and many others flooded Joe's mind in the peculiar way this occurs when time seems to stand still and a split second becomes hours.

Joe's panicked warning aroused Durman out of his thoughts about Joe's performance and back to the aircraft. As his eyes flashed back to the instruments, the major observed the pitch at 32° and the airspeed at 90 knots! Instinctively he firewalled all four throttles which only served to aggravate the situation causing the nose to rise higher. The word CLIMB appeared on the attitude indicator, the first time in Easy Sam's life that he had ever seen it in flight in the big transport. His mind began moving at a thousand miles an hour as he took control and helped Joe in the fight to regain control of the shuddering aircraft. He applied full left aileron in an attempt to roll off from the unusual attitude. Even with full aileron in, nothing was happening! He glanced at the airspeed stuck at 70 knots and realized that they were fully stalled and too slow for any aileron effectiveness. As adrenalin surged through Sam's system, he decided on one last desperate measure. He applied full left rudder and prayed that the spin entry would not occur. Then slowly, agonizingly, the left wing began to drop as the altimeter unwound. As they passed 5,000 feet on the way down, they hit 45° bank and the airspeed began to increase. At 2,100 feet they finally returned to wings-level coordinated flight. Durman returned the aircraft to Joe who flew a surprisingly smooth approach and landing from that point on.

Back at home station, Major Durman conducted the debriefing of Joe's check. After citing the numerous errors Joe had made, Durman concluded, "The overall grade you've earned isn't justified by your earlier performance, but I'm passing you anyway. My rationale is that anyone who has the composure to help regain control of an aircraft after encountering a full stall has the right stuff and will someday be an AC who can be counted on to handle any emergency."

After dismissing Joe, Durman sat for a long while in the silence of the debriefing room. His thoughts ran to the kid's performance. Sure, the kid had made some mistakes. No doubt there. But Durman had committed the unforgiveable sin. He'd been so intent on watching Joe that he'd lost track of the situation. By failing to take immediate control of the aircraft, he'd allowed an inflight emergency to nearly result in catastrophe. The fact that they'd recovered at all was more luck than anything else. They'd come within a hair's breadth of being nothing but a smoking hole in the ground. Sam sat for awhile longer and then pulled out a Form 8 and began to write . "Administrative Downgrade. Major Sam Durman is downgraded to unqualified as a result of an incident that occurred on...." With that, he confirmed maintenance knew about the four overboosted engines on 39026 and then left the Form 8 on his commander's desk.

ABOUT THE AUTHOR

Maj. Ed Duchnowski completed pilot training at Craig AFB, Alabama, in 1964. He is a command pilot with over 7,000 hours of flying time, of which 6,000 are in the C-141. Major Duchnowski is presently the Assistant Deputy Commander for Operations of the 446 MAW (Assoc) at McChord AFB, Washington. A graduate of the resident course of ACSC, he also holds a masters degree in business administration from Auburn University.

TMF Instrument Quiz

This is your lucky day. You and your crew have been chosen to fly into Bremen with a load of oranges. After determining that, yes, it is indeed possible to get you and your trusty flying machine in and out of Bremen safely and legally, you pull out the approach plates for "EDDW." Unless otherwise noted, consider you have all the necessary equipment to fly the approach as published.

1. The field elevation is _____
   a. not given.
   b. 13 meters.
   c. 13 feet.
   d. transmitted to you on final approach.

2. The minimum safe altitude is _____
   a. 2,100 meters.
   b. 2,100 feet.
   c. not given.
   d. 2,500 feet.

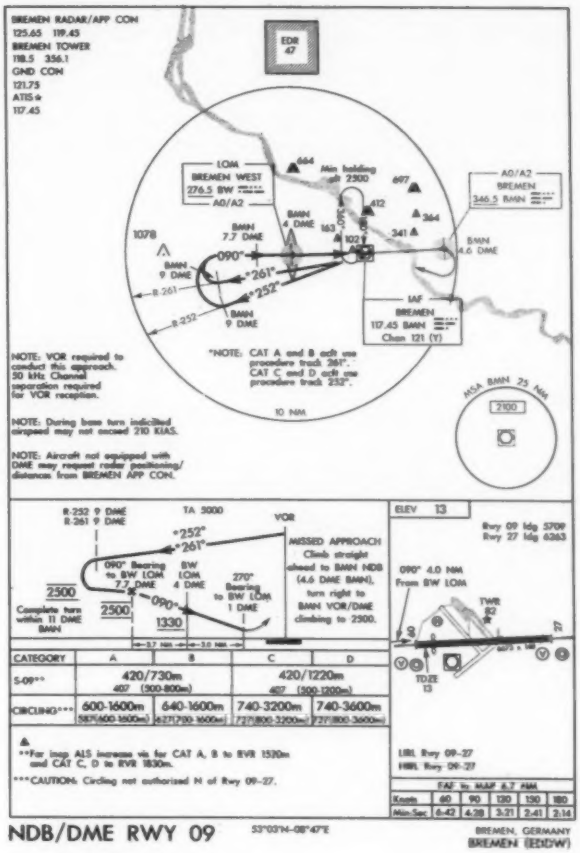
3. The minimum safe altitude is given within (distance) of (navaid)
   a. 25 km/BW.
   b. 25 sm/BMN NDB.
   c. 25 nm/BMN NDB.
   d. 25 nm/BMN VOR.

4. DME is required to shoot the approach.
   a. True.
   b. False.

5. The holding pattern depicted over the BMN VOR is _____
   a. a missed approach holding pattern.
   b. an arrival holding pattern.
   c. a holding pattern in lieu of procedure turn.
   d. none of the above.

6. You can't exceed 210 KIAS during any part of the approach.
   a. True.
   b. False.

7. The outer compass locator is _____ from the runway threshold.



NDB/DME RWY 09 53°03'N-08°47'E
BREMEN, GERMANY
BREMEN (EDDW)

8. Landing on runway 09, the usable runway length is _____
   a. 6,673 feet.
   b. 6,673 meters.
   c. 7,173 feet.
   d. 5,709 feet.
   e. 5,709 meters.

9. Since this is an NDB/DME approach, VOR isn't required to shoot the approach.
   a. True.
   b. False.

10. ALS stands for _____
    a. all landing systems.
    b. approach landing system.
    c. any landing series.
    d. approach lighting system.

11. Your aircraft is category C. Your usual careful check of the notams indicates the ALS is out. What is your landing RVR?
    a. 1,200 miles.
    b. 1,200 feet.
    c. 1,200 meters.
    d. 1,830 meters.

12. As you begin your descent, you're told to level at FL 070. At what altitude would you ensure the QNH is set?
    a. No particular altitude.
    b. 6,000 meters.
    c. 5,000 meters.
    d. 5,000 feet.

13. Immediately after passing the FAF, your DME breaks lock. Your approach speed is 150 knots. When would you go missed approach? Assume no wind.
    a. After counting "50 potatoes."
    b. Immediately.
    c. After 2 minutes 41 seconds.
    d. What's a missed approach?

14. The altitude depicted at the outer compass locator is 1,330. Is that in meters, feet, or yards?
    a. meters.
    b. feet.
    c. yards.
    d. none of the above.

15. Is that altitude a minimum, maximum, or mandatory altitude?
    a. minimum.
    b. maximum.
    c. mandatory.

16. The highest obstacle depicted on the approach plate is _____
    a. 697 feet.
    b. 697 meters.
    c. 1,078 feet.
    d. 1,078 meters.

ANSWERS

1. **c.** Field elevation is given in feet in the upper left hand corner of the airport sketch.
2. **b.** The minimum safe altitude is given in feet and is located in the lower right hand corner of the approach planview.
3. **d.** Distances given are in nautical miles from the navaid depicted in the diagram, or in this case, the BMN VOR.
4. **b.** DME is not required to shoot the approach. The note in the bottom right hand corner of the planview explains this.
5. **b.** An arrival holding pattern is depicted in a medium color violet. If you can't remember what color an arrival holding pattern or a missed approach holding pattern is, turn to the legend in the front of every approach book for guidance.
6. **b.** The note restricts you to a maximum 210 KIAS during the base turn. (Remember, a base turn is ICAO terminology for a procedural track.) You could hold a higher speed if your aircraft requires it.
7. **d.** Refer to the airport sketch in the lower right hand corner. The track value and distance from the primary radio navaid to the runway threshold is shown in this case. If the navaid is on the airport, the arrow would show the track to it. This is very helpful in determining your expected runway alignment. It's not necessarily the same distance from the FAP.
8. **d.** Again, refer to the sketch.
9. **b.** VOR is not only required to shoot the approach, but it must also have 50 KHz channel separation! The procedure identification is derived from the type of facility providing final approach guidance, and may not include everything you might need to fly the approach!
10. **d.** Approach lighting system. If you can't remember that, turn to the legend in the very rear of the approach plate for an in-depth look at approach lighting.
11. **d.** RVR is given in meters, and the note in the approach profile instructs you to increase the RVR if the ALS is out.
12. **d.** The transition altitude (TA) is given at the top of the approach profile.
13. **c.** The block under the airport sketch gives the elapsed times from final approach fix to missed approach point. You should also advise Bremen Approach Control and ask for radar distances. If you can't get the distances, also remember not to descend below 1,330 feet.
14. **b.** All altitudes are given in feet.
15. **a.** The solid line under the figure (1330) indicates a minimum altitude.
16. **c.** Altitude is given in feet. The symbol (^) indicates you need look no further to find the highest obstacle within the planview area. If there is terrain which is higher, it will be shown as a large dot with heavy type showing its elevation; the large obstacle symbol wouldn't be used in this case.

A look at the Civil Air Patrol in action

CAP—A SAR Diary

by Capt. Wendy K. Hurst
Georgia Wing
Civil Air Patrol

Hey, all you Herky Bird and Starlifter drivers, and all you undercover C.R. Terrors. Did you know about the other side of the Air Force? No, I don't mean TAC or SAC, but the Civil Air Patrol (CAP). CAP, the official auxiliary of the United States Air Force, is a Congressionally-chartered, non-profit civilian corporation made up of volunteers. Before you dismiss us as amateurs, though, consider the following:

- Annually, we log 80 percent of the search hours flown in this country in conjunction with the Air Force Rescue Coordination Center (AFRCC), at far less expense than if flown by the active forces.
- Throughout our ranks are members of both active duty and reserve military units as well as airline pilots, truck drivers, doctors and the like.
- While we qualify as amateurs (since we aren't paid for our services), we strive to be thoroughly professional in our activities.
- Other than the satisfaction of a job well done, the only compensation we receive is reimbursement for fuel, oil, some maintenance and communications expenses.
- In addition to search and rescue,

Georgia Wing Civil Air Patrol 1st Lt. Carter Jones radios in his position after attending to Cadet Jim Blair (playing the part of the victim). Simulated rescue was part of the 1983 Southeast Region search and rescue competition held at Knoxville, Tennessee.

Photo by SSgt. Rand McNatt, USAF

we also have commitments to our cadet program and to aerospace education.

• We have units in every state, the District of Columbia, Puerto Rico and some overseas military bases.

But to better illustrate what we do, here are some excerpts from the log of the Mission Coordinator (MC) for search and rescue (SAR) mission 4-3437. They describe how CAP functions during a SAR mission. The MC's thoughts and explanations are in parentheses.

Senior Member Linda Doering reads map while teammates take bearings on ELT signal.

Day One

0634Z— Received a call from the Wing Director of Emergency services. AFRCC had called with a mission notification. Piper Cherokee N6457X, blue over white, had left Florida early Thursday morning, bound for Cincinnati. Two persons on board. Pilot stopped for fuel at Wilson Airport in Macon, Georgia. Macon Flight Service Station (FSS) reported a call from pilot requesting weather forecast. Due to haze, FSS advised against VFR. Thunderstorms were forecast to build over the mountains during the afternoon. Pilot stated he was not IFR rated. Aircraft took off at 1203 local, didn't arrive at destination and filed no flight plan. Emergency locator transmitter (ELT) being heard in general area. (Looks like a real one this time, not just another ELT going off by itself. No flight plan. Pilot's family probably started worrying when he didn't show up for dinner.)

0638Z—Called AFRCC for further details. All CAP wings along intended route of flight have been notified. AFRCC controller gave coordinates for SARSAT (SAR satellite-aided tracking) hits and airborne ELT reports. SARSAT hits scattered over mountains in northeast Georgia, mostly in area of Harris and Toccoa VORs. Ramp searches have been started. Airborne reports too high to be of much use.

0645Z—Called Pete Cole to be Air Ops. Discussed mission with him and decided on Athens, Georgia, as a mission base—good facilities, lots of ramp space, instrument approaches, uncontrolled field and in the middle of possible search areas. He'll start calling the CAP squadrons in northern and central Georgia for aircrews and ground teams, and have ground teams stand by until needed. Advised the Atlanta squadron to launch a sortie right away to check out the ELT. We need to get mission data teams started to talk to folks where pilot stopped for fuel and to talk to friends, family and business associates. Asked Pete to get an integrated track analysis program (ITAP) from Atlanta Center and weather radar picture from FSS. If the guy was using his transponder, we may be able to pick him up on the ITAP from the FAA computers.

0933Z—Set up in Athens. AFRCC advised preliminary interviews with family and friends indicate pilot has 250 hours, some instrument training. Normally cautious, but inclined to press the weather a bit. No experience in mountain flying. Usually flew VORs.

0956Z—Called Atlanta FSS for weather briefing. Standard Georgia summer day: hot, humid and hazy with chance of thunderstorms building in afternoon, especially in vicinity of mountains. Marginal VFR now, but should improve towards noon.

1013Z—Mission Public Affairs Officer (PAO) arrived. Preparing news releases to ask if anyone heard or saw anything about the missing aircraft. Will call various radio and TV stations and local newspapers to inform them of the search and to ask for their assistance.

1042Z—ELT search sortie landed at mission base. Heard ELT, but signals were weak and intermittent. Seemed to be coming from area around Harris VOR. Dispatched ground teams from Toccoa and Dahlonega, Georgia, towards that area.

1623Z—Salvation Army arrived with mobile canteen and lunch for everybody. (Bless 'em all!)

1636Z—Air search being hampered by haze in mountains reducing visibility to two to three miles. CBs also beginning to build.

1830Z—Scattered thundershowers in mountains. All aircrews are out of area, just as briefed by safety officer. (Maybe the storms will get out of the way and we can go back in there. It's usually

pretty clear after a rain. Sure not going to do the survivors any good, though—assuming there are survivors. Must think positive.)

2021Z—FSS forecasts cold front to pass through northern Georgia overnight. (Should make searching better tomorrow, if we have to go that long.)

2247Z—Continuing to search. ELT not being heard any more. Visibility better, but everyone's approaching crew-rest limitations. Ground crews spending the night in the field.

2332Z—Called in daily report to AFRCC. Agreed to concentrate forces in area of Harris VOR tomorrow.

Day Two

1000Z—Contacted AFRCC for update. No further developments for us. FSS reports visibility four to five miles this morning, gradually improving throughout the day. Looks like we got a break on the weather so we'll be able to use some of the mountain flying techniques we've been practicing. The ground teams will be in the area too. That'll save us some time if we find anything.

1343Z—Aircrew spotted possible target. Can't tell if there are any survivors. Aircraft will remain over target to guide ground team in. Notifying county sheriff.

1517Z—Ground team reached site. Both occupants alive! Ground team administering first aid since member of team is an emergency medical technician. Imperative to airlift one victim out; preferred for other. Ground team securing site for FAA and NTSB. Team says it looks like a forced landing in the tree tops. Landing gear and both wings sheared off, fuselage torn up, but the cabin is pretty well intact.

Photo by MSgt. Rus Brown, USAF

Georgia Wing Civil Air Patrol aircraft and ground team.

1524Z—Called AFRCC and reported condition of survivors. Requested helicopter to airlift survivors out. Helicopter not available through sheriff's office.

1527Z—Issued recall to all units not directly involved in rescue. Dispatched another aircraft to scene to act as airborne radio relay.

1533Z—AFRCC located AFRES rescue helicopter on static display at Knoxville airshow. Will be at target site within the hour. (I'll bet that'll give the crowd at the airshow a thrill they hadn't counted on. That must be some trick to get everyone away from the Jolly Green while they're trying to scramble.)

1549Z—Helicopter airborne. ETA at crash site in 20 minutes.

1615Z—Ground crew reports helicopter in sight. Will direct them to possible landing zone near the victims.

1631Z—Helicopter landed in field. Victims being transported to helicopter. One on stretcher and one ambulatory.

1646Z—Recalled all aircrews and ground teams. Notified everybody concerned and began paperwork. Prepared closing report for AFRCC.

1844Z—Victims hospitalized in Chattanooga. Pilot has severe injuries but expected to recover (broken leg, cracked ribs and a concussion). Both survivors suffering from dehydration, shock and exposure. It looks like we'll share the "save" with the helicopter crew. (I'm glad the chopper was around, though. Can you imagine being carried out of that spot on a stretcher when your leg is broken?)

1943Z—Everyone home safe and sound. Called in final reports to AFRCC. Now it's my turn. I'm glad I asked someone from my squadron to stick around and drive me home. I think, no, I *know*, I'm going to flake out in the back seat on the way home. You guys in MAC really know how to wear a person out.

1983 MAC Safety

The MAC Trophy for Flying Safety

Presented to the MAC air force or service with the most effective flying safety program as determined by flight mishap rate, severity, mishap causes and mission.

21st Air Force

CINCMAC Special Award for Safety

Presented to a MAC air force, division, service, unit or individual in recognition of outstanding achievements and improvements in safety.

23rd Air Force

MAC Flight Safety Achievement Award

Presented to wings and geographically separated units that are accident-free and have an effective flight safety program during the calendar year.

Category One

62 MAW & 446 MAW (Assoc), McChord AFB
63 MAW & 445 MAW (Assoc), Norton AFB
89 MAW, Andrews AFB
314 TAW, Little Rock AFB
317 TAW, Pope AFB
374 TAW, Clark AB
375 AAW & 932 AAG (Assoc), Scott AFB
436 MAW & 512 MAW (Assoc), Dover AFB
437 MAW & 315 MAW (Assoc), Charleston AFB
438 MAW & 514 MAW (Assoc), McGuire AFB

Category Two

316 TAG, Yakota AB
616 MAG, Elmendorf AFB
40 ARRS, Hill AFB

MAC Support Safety Achievement Award

Presented to units designated or functioning as military airlift support squadrons and mobile aerial port squadrons. Units selected must have exceptional quality of services and successful mishap prevention programs.

3 MAPS, Pope AFB NC
603 MASS, Kadena AB
605 MASS, Andersen AFB
619 MASS, Hickam AFB
625 MASS, Torrejon de Ardoz AB
Det 3, 625 MASG, Hellenikon AB

Award Winners

MAC Distinguished Flying Unit Safety Award

Presented to the best unit from among those receiving the MAC Flight Safety Achievement Award.

Category One

437 MAW & 315 MAW (Assoc), Charleston AFB

Category Two

40 ARRS, Hill AFB

MAC Safety Officer of the Year Awards

Primary Duty

Maj. Dwight D. Sterling
436 MAW, Dover AFB

Additional Duty

1st Lt. George D. Goforth
Det 5, 40 ARRS, Edwards AFB

MAC Safety NCO of the Year Awards

Primary Duty

MSgt. James Cunningham
HQ 22 AF

Additional Duty

SSgt.Richard J. Porter
Det 3, 625 MASG, Hellenikon AB

AWTH's Corner

Switch Hitter

Problems with switch configuration recently caused a CT-39 crew red faces and a delayed departure. It seems the pilots were down to the last item in the lineup checklist, which involves checking the heading indicators with runway heading, when the AC noted the compasses were off approximately 60°. As the pilot raised the switch guard on the "gyro compass mode" switch to slave the gyros, he accidently hit the "passenger oxygen valve" lever. As advertised, the oxygen masks deployed in the cabin and the oxygen warning horn sounded.

The Sabreliner crew aborted their takeoff, stowed the masks and advised the passengers they would taxi back for another takeoff. Confirming the compasses were, in fact, operating normally, the crew made an uneventful departure.

After the incident, the AWTH submitter "got to looking at the two switches and noticed they were only about three-eighths of an inch apart." He continued, "I'm surprised I hadn't gotten them both before. My guess is they are both hit inadvertently more than is known, since the compass problem is quite common. But turning on the pax oxygen makes you feel so dumb, no one admits doing it. Terrible switch configuration."

Confusing or easily misidentified switches or controls can be a problem on any aircraft. But don't ignore such configurations. Take the time, like this individual, and let someone know a problem exists. Who knows, you might just save a fellow crewmember from making the same mistake.

The Greening of Willie Starbuck

by Lt.Col David M.H. Sibbald
326 MAS/CC
Dover AFB, Deleware

About once a month, if they were lucky, the pilots could count on seeing Charlie Macadam livid. And it was great fun. At least it was great fun if you weren't the cause of Charlie's ire. If, however, you *were* the cause, it was no fun at all, as Captain Willie Starbuck was about to find out. Macadam strode into the pilot section and the customary raucous chatter stopped dead in its tracks.

"You! Starbuck!"

"Me, sir?"

"Yes, you, sir! Take yourself up to my office right now—and wait!"

"Yessir!"

A wide-eyed Starbuck, six feet of lanky, normally fast-talking aircraft commander, took himself off up the corridor while Macadam surveyed the remaining silent pilots.

"The rest of you ruffians can start breathing again. All I'm going to do is have Starbuck for lunch. So relax—and keep your feet off the furniture!"

In Macadams's office, Willie Starbuck stood in front of the desk practicing swallowing and hyperventilation. Macadam slid slowly into his chair and surveyed his quaking subordinate.

"Willie," he said softly, "how old are you?"

"Thirty-two, sir."

"Uh huh, and how much flying time do you have?"

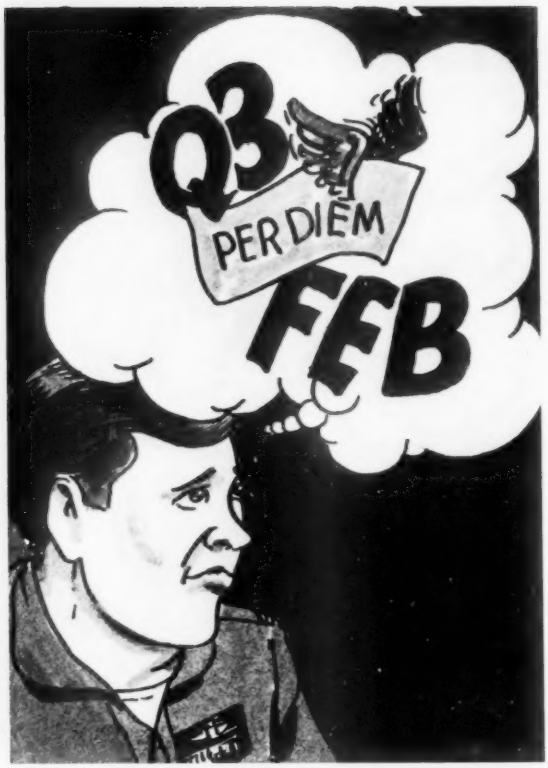
"About 3,200 hours, sir."

Macadam leaned back in his swivel chair and made a steeple with his fingertips. "Is that a fact?" he asked reflectively. "Thirty-two years old and 3,200 hours? The last thousand or so in the C-5, no?"

"Yes, sir," Willie croaked.

"Then will you kindly tell me," Macadam was out of his chair, palms flat on the desk, leaning towards Starbuck, "how a captain, who is 32 years old and who has 3,200 hours and who is an aircraft commander in the C-5, got himself in the kind of box you got into yesterday at McGuire?"

Starbuck stood in front of the desk practicing swallowing and hyperventilation



Starbuck, well aware that there was no plausible answer, tried an implausible one.

"The duty officer made me do it," he whispered.

Macadam affected great surprise. "No kidding! The duty officer, eh? There you were at 35,000 feet, 700 miles away and some duty officer sitting on the ground made you do it. Fantastic! What did he use—a laser gun?" Macadam was back on his high horse, shouting. "What are you trying to sell me? That line might work for Flip Wilson, but it ain't going to work here. The duty officer made me do it, indeed! No sale! I'm not buying it! Do I look like I just walked out of some tidewater swamp? Do you see any hayseed in my hair? Huh?"

Willie trembled visibly, swallowed some more and licked his lips. "Uh, no sir."

Macadam pointed to the chair. "Sit down! Sit down before you fall down."

Macadam sat down too and sighed audibly. "OK. Let's have it, all of it, slowly and in order, right now. Speak up, I'm all ears."

Starbuck eased into the chair and found out his voice was working better. "We were inbound from South America. The weather here at Dover was forecast to be marginal; McGuire was supposed to have alternate minimums. With the load and all I didn't have much fuel to spare. I had enough fuel for one shot at Dover and if that didn't work, enough to get over to McGuire and land. It was tight but it was legal. Anyway, Charleston was wide open, so I figured we could look things over around Charleston and if it didn't look good, put it on the ground there for fuel or crew rest.

"When we talked to Metro, we found out that Dover was below minimums but McGuire still had alternate minimums. Looked to me like we ought to dump it into Charleston, get some fuel and think it over."

Macadam glared across the desk. "So far you haven't made one wrong move; it's been standard, heads-up MAC aircraft commander thinking all the way. So why did you end up at McGuire?"

"Uh, well, we got the impression that the command post would rather have the airplane at McGuire than at Charleston. Since McGuire had 500 and 1, I decided to give it a try. Well, it didn't. When we got there, the visibility was down to a quarter of a mile in fog; Newark, Kennedy and Washington were all zero-zero. I didn't have fuel for anywhere that had better weather, so I coupled up the autopilot and made an autoland. Worked fine, too. First time I'd ever done it in the weather."

"Let's be thankful for small mercies," Macadam said, then asked: "Listen! This is important—exactly who directed you to go to McGuire?"

"Uh, I'm not sure. I don't remember. I kinda got the impression..."

"Impression! You can forget the impression," Macadam yelled. "They're asking questions at headquarters this afternoon and you can bet your per diem check that your name will be mentioned—frequently! But that really isn't the issue, is it? Who was in command? Who's responsible for the safe and prudent operation of the airplane? Who's the final authority for what's right and proper in your big C-5? You are! Says so in 55-2, 60-16, numerous FARs and ICAO documents. And you abdicated!"

Macadam's bony forefinger stabbed the air in Willie's direction. "You quit flying that airplane and just started following the wind-

shield wiper around. And I'm not gonna have that! I don't pay you all that aircraft commander money so you can let somebody else take responsibility for your airplane away from you. No sir!" Macadam was silent for a moment. "Next question is, why'd you do it?"

Willie Starbuck was out of ideas and his voice was a whisper. "I don't know."

"Huh," grunted Macadam. "Well, I do. And naturally, I'm gonna explain it to you."

Starbuck stared at Macadam. Here was this middle-aged, raving chief pilot about to explain to Willie how his mind worked, something that Willie himself didn't know. Starbuck reflected for the umpteenth time that when it came to airplanes and pilots, Macadam had no doubts. Ever! Right was right, wrong was wrong and Macadam, if you weren't sure, was just the man to tell you which was which.

You quit flying the aircraft and started following the windshield wiper around

"Someone suggested you consider going into McGuire last night, and you went along with his 'suggestion.' You went along with a 'suggestion' without adequate evaluation, and that's not what being an AC is all about. Let me tell you, command and control is a great idea and MAC has been refining it for 20 years. Until they get it perfect, though, best you keep using your head. When you're in doubt, like yesterday, that's when you do what you *know* to be safe—like landing at Charleston last night instead of McGuire."

Macadam fumbled for a moment in his desk drawer. "I'm gonna tell you a story. Here, look at this. It's a letter from some colonel over in Europe and he's madder'n blazes. Know why?"

Starbuck shook his head.

"It was Gordon that upset him. Captain Gordon. You know him. Well anyway, Gordon was coming up the Med out of Incirlik for Torrejon. He was down around Caraffa on the heel of Italy when number four quits on him. Gordon keeps on for Spain, but about 15 minutes later he gets vibrations on number two which are just about out of limits depending on how closely you look at the scope. So Gordon starts looking for some place to put it, and what's right there? Sicily! And down in the corner is Sigonella where the Navy paints its boats or something. Well the command post in Europe wants to know if there's any way they can make it to Torrejon or, better still, Rhein Main where they've got more and better maintenance. Gordon, of course, tells them in no uncertain terms what he thinks of their ideas and proceeds to land at Sigonella."

"When he gets on the ground, Gordon has a long, acrimonious conversation with this colonel, see, and Gordon has the best of it. Know what this letter's all about? It's about Gordon's big mouth and lack of diplomacy. Not one word about diverting to Sigonella and not even a whisper about the six days it took to get two engines down there and change 'em. Gordon I can defend! Gordon I don't even *have* to defend. Soon as he gets his mouth under control, he'll go far."

Macadam was silent for a moment then glared again at Starbuck. "You're hard to defend. You'll get to talk to all the big guys across the street: the DO, the chief of standeval, maybe even the wing commander. You'll get a checkride from one of the wing guys and maybe they'll even make you fly copilot for a while."

Starbuck stared stonily. "What if I bust that checkride?"

Macadam's whole face lit up. "Oh, well! Then the pressure is really on! Yessir, this could really be fun! You could even bust that second checkride, then I'd have to start thinking about an FEB."

Starbuck stared. "An FEB! Are you kidding?"

"Yeah I'm kidding. Nobody's looking for someone to blame, not even the big guys across the street. We're looking for answers. But they are going to look at you hard, Sonny, and it's gonna be no fun at all."

Macadam grinned again.

"What the heck? Mother never said it was gonna be easy. C'mon. I'll buy you a beer. Besides, Gordon is at the bar. He'll be happy to give you some aircraft commander lessons—so long as you're buying, that is." ✈

Mishap With A Moral

The commercial crew felt pressured to...

Get Home

The spring weather wasn't unusual in Knox County, Maine. Located in the northern part of the state astride a peninsula, residents there are used to fog. But on the evening of 30 May 1979, ocean fog reduced visibility to only three fourths of a mile and the light winds weren't budging a 300 foot ceiling. In fact, conditions were deteriorating.

Downeast Airline's Flight 46 had departed Knox County Regional for Boston's Logan International Airport that afternoon. The flight itself was a regularly scheduled round robin and both pilots had flown the route previously. Both were instrument qualified, so the night flight in bad weather wasn't a new experience. But this night both pilots were unusually concerned—concerned about weather conditions experienced on their flight to Boston and concerned about their airplane. The deHavilland DHC-6 Twin Otter had exhibited unusual inflight vibrations on the flight to Boston, similar to ones reported on previous flights. Earlier complaints had narrowed the source of the shaking to the twin-engined plane's number two engine. Still, the condition persisted, even after a major overhaul of the engine.

Originally scheduled to depart Boston at 1850, the crew delayed their takeoff hoping the weather would improve at Knox County Regional. At about 1900, the captain of Flight 46 phoned Rockland (Knox County Regional) for the current weather conditions. The Downeast Airlines certified observer who answered the call reported an indefinite 700 foot ceiling, sky obscured and visibility three miles in fog. Thirty minutes later, the captain phoned National Weather Service

(NWS) observers in Boston for their Maine forecast, but the NWS couldn't provide a terminal forecast for Rockland. The captain elected to complete the round trip and at 1955, Flight 46 departed Boston on an IFR flight plan.

After takeoff, Logan Departure Control vectored the deHavilland to the VORTAC at Kennebunk, Maine. After switching to Navy Brunswick Approach Control, Flight 46 reported its altitude as 7,000 feet.

At 2042, the flight was cleared to cruise at 3,000 feet for the approach to Knox County Regional Airport. Navy Brunswick advised the crew that radar service was terminated 14 nautical miles southwest of the Sprucehead NDB and to switch radio frequencies to Rockland Unicom.

At 2052, Navy Brunswick radar showed Flight 46 about one nautical mile south of the Sprucehead NDB at 1,500 feet. That was the last radar position recorded.

At 2054:25, Navy Brunswick copied the following radio transmission from Flight 46 "...looks like we're probably going to have to miss the approach here at Rockland. We're going down but maybe you can pull us out a clearance for Augusta." At 2054:30, Navy Brunswick told Flight 46 that the clearance was "on request." Rockland Unicom copied one additional radio transmission from Flight 46. It stated concisely, "Sprucehead inbound."

Shortly thereafter, Flight 46 crashed into a heavily-wooded area about 1.2 miles south-southwest of Knox County Regional Airport, killing both crewmembers and 16 of the 17 passengers on board. The aircraft was destroyed.

Analysis

How does a properly functioning airplane with two experienced pilots at the controls fly into the ground on an instrument approach to its home field? The captain of Flight 46 was Downeast Airline's chief pilot with 17 years of flying experience. Those who worked with him regarded him as extremely safety conscious and an excellent pilot. The first officer, though new to Downeast Airlines, had 2,500 flight hours and was considered capable by his peers. Some concern had been raised about his appreciation of the crew coordination concept and about his basic instrument flying skills, but he was, in fact, properly qualified and certified for night instrument flight in the DHC-6. Further, he was under the direct supervision of another highly skilled pilot.

The National Transportation Safety Board's (NTSB) investigation of the crash revealed numerous facts that could have contributed to this tragedy. According to the NTSB findings, other pilots who had flown with the captain of Flight 46 reported that he generally flew the leg to Boston and let the first officer fly the return leg of the Knox County/Logan run. On the return approach to Rockland, the captain usually insisted that his first officer hold 90 to 100 knots airspeed, about 10 psi of torque, and set flaps at 10° maximum. The NTSB determined that the first officer was at the controls of the aircraft at the time of the accident.

The NTSB also investigated previously identified problems with the aircraft's flap selector and flap position indicator. The DHC-6 flap selector is mounted on the overhead console. The selector lever moves in a slot with position settings marked at 10° intervals from 0° to 40°. A hydraulic system moves the flaps about 1° per second when the lever is actuated. This speed creates a time delay between selection of the desired flap setting and the moment when the flaps actually reach that position.

Aircrews had previously criticized the DHC-6 cockpit lighting, especially around the flap control lever. Pilots stated that the flap selector had to be located and set largely by feel. Illumination of the flap position indicator on the windshield center post was so poor that it was virtually impossible to read. This problem was compounded by the use of a mixture of red and white light bulbs in the Twin Otter's instrument lights which made proper adjustment of cockpit lighting difficult.

Pilots also reported experiencing

No standard practices existed to ensure effective crew coordination.

problems with the altimeters on the mishap aircraft. These conventional three-pointer altimeters sometimes "stuck" during climbs and descents. One hundred foot differences between the captain's and first officer's indicators were not uncommon. A former Downeast pilot had specifically complained about the first officer's altimeter. On a previous flight, he reported that it moved in jumps of 50 to 150 feet and had been in error by as much as 350 feet.

Numerous employees, including 14 former Downeast pilots, provided written statements and sworn testimony critical of management policies and practices as related to flight safety. Some of the company's alleged improper policies and practices included the establishment of illegal "company mimimums" for landing approaches; the use of unapproved instrument approaches; instructing pilots to avoid a mandatory procedure turn on the Knox County NDB approach; ignoring takeoff and landing visibility minimum criteria and demanding the use of specific alternate airports for company convenience. The company was also accused of pressuring pilots to exceed aircraft gross weight limits; insisting that aircraft be flown with known mechanical defects; and offering to pay fines for pilots cited for FAA rule violations. The president of the company denied most of the allegations or offered explanations for them.

Airline management was also criticized for failing to provide satisfactory aircrew training over and above experience gained while flying the line. Although the company's procedures manual stressed the importance of "good teamwork between pilot and copilot," *no standard practices existed to ensure effective crew coordination.* The NTSB report characterized management policies as "conducive to generating accident situations." Those same management policies may well have added to the reluctance of Flight 46's crew to cancel the flight, even though their aircraft had a suspected engine problem and weather along their return route was poor. The NTSB speculated that the two pilots might have feared disciplinary action if they cancelled a revenue flight and grounded their aircraft away from Downeast maintenance facilities.

The board concluded that (a) the airline's crew training program was inadequate, (b) there was company pressure to complete the round-trip flight, despite bad weather, and (c) the captain of Flight 46 probably suffered from job related stress which lead to chronic fatigue. Additionally, the NTSB faulted the FAA for inadequate surveillance of Downeast operations and for failing to act on reported rule violations by the company.

Probable Cause

The NTSB stated that the probable cause for the crash of Flight 46 was the flightcrew's failure to arrest the aircraft's descent at the MDA without the runway environment in sight, for unknown reasons. However, the NTSB believes inordinate management pressures, the captain's inadequate supervision of the flight, the marginal instrument proficiency of the first officer, inadequate crew training and procedures and the captain's chronic fatigue were all factors in this accident.

Applications to MAC

MAC aircrews encounter stress, bad weather, and fatigue on a fairly regular basis. We constantly hear of the importance of flight safety, but we must realize that the ultimate responsibility for safety rests with us, the flight crew. We determine what is safe and what is not, and although we all strive to "hack the mission," we can't sacrifice safety for the sake of mission accomplishment.

How many times have you bowed to the pressure of getting home at any cost? If you answered even once, you've been fortunate indeed. On this night the captain of Flight 46 wasn't so fortunate.

Adapted from NTSB-AAR-80-5

C.R. TERROR

The Ham-Handed Honcho harms a Herk

Although it was March and still cool throughout the land, the early morning sun penetrated the humid, Deep South air with a vengeance, causing steam to rise eerily from the ground. Coupled with chirping crickets and bellowing bull frogs, the entire scene was definitely primeval, a thought completely and utterly lost on MAC's Most Senior Major. C.R. Terror literally inhaled yet a fourth bowl of lumpy grits at Scarlett's Blue Goose Cafe and All-Night Truck Stop.

"You know, Sam," the Sultan of the Suwanee gestured to his staunch second seater, "these grits is good, as they say down here. Why, I don't suppose there's anyone in MAC who hasn't heard of Scarlett's famous grits and coffee. Uh, pass the butter, Sam." C.R. paused his occasional incoherent babblings briefly as he deftly slid half of the one-pound stick of butter into the steaming mass, watching intently as the mixture became a kaleidoscope of yellow and white.

"Thanks for the kind words, Major Terra," remarked Scarlett, standing nearby with a carafe of coffee. "Ya'll want another cup o' coffee?" Scarlett asked, her drawl oozing forth as smoothly as warm sorghum syrup in July.

"You betcha, Scarlett. And thanks." The Jovial Java-Gulper delicately slurped a mouthful of the licorice-colored liquid, smacking his lips in childish delight. "I certainly wish MAC's inflight kitchens could duplicate your coffee recipe, Scarlett." Indeed, only C.R. could appreciate Scarlett's stout coffee, well known among the truckers who frequented the place as a suitable substitute for 60-weight motor oil. C.R. continued his praises, "Why, this coffee has everything—aroma, flavor, color...."

"And viscosity, Boss. Don't forget viscosity," piped up Sammy as he gamely chewed on a gulp of the glutinous mass. The Menial Mentor, in the meantime, was busily mixing the butter-and-grits combination in his earthenware bowl.

"The secret of enjoying grits, Sammy m'lad, is proportion and blending. You simply must have the proper proportion of grits to butter." C.R. picked up the bowl, tucked it neatly under his left arm and started whipping the mixture with his fork, looking for all the world like a squatty version of the Gallivanting Gourmet. But instead of keeping most of the

mixture in the bowl, C.R.'s inept stirring hurled globs and splatters in a random pattern, showering Sam and Scarlett.

"Isn't it time we got to the squadron, Boss?" asked Sammy hurriedly, hoping to divert C.R.'s attention.

"Right you are, Sam. You get the bus and I'll finish this last bowl of grits." The Flatulent Flyboy literally inhaled the last trace of grits in a never-ending blur of spoon-to-mouth-to-bowl-to-mouth, etc. "And how about a couple of styrofoam cups of that coffee of yours to go, Scarlett. Sammy and I just *love* your coffee, you know!"

"Sure thing, C.R. I'll make it *extra* strong, just the way you like it," replied Scarlett. Hearing this, Sammy groaned, hoping the flimsy containers could contain the acidic brew.

A short time later, the Dynamic Duo arrived at the Air National Guard training facility where they were to receive a checkout in the unit's C-130Hs. In a daring experiment, C.R. had been tapped as a test subject to see if the ANG would have any better luck at training him than a regular unit. Sammy was along as the control in the experiment.

"Look at those beauties, Sammy. Aren't they pretty?" asked the Herky Honcho, gently touching the camouflaged skin of an almost-new Herk.

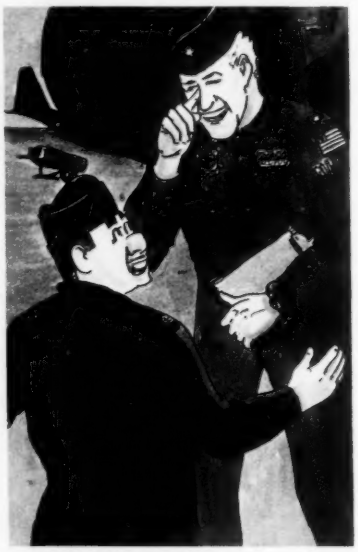
"Yessir, Boss. You could practically eat off the cargo floor, they're so clean."

About that time, the unit's chief pilot and C.R.'s instructor arrived. A tall, lanky fellow, Lt. Col. Norm "Snake" Fabor instantly recognized his pupil.

"My oh my! Is that you, C.R?" Snake asked incredulously.

"Snake? Snake Fabor, my old friend, is that you?" shot back Terror.

"Why, I didn't think you'd still be driving airplanes, C.R. Didn't they give you an



FEB back in '59? Or was it '69?"

"Both," replied the Bilbous Buffoon, "but as usual, I beat both those bum raps. You can't keep a sterling aviator like me restrained by earth's surly bonds, you know." C.R. pumped Fabor's hands vigorously, obviously anxious to get started. "Let's kick the tires, light the fires and all that other jazz, Snake old boy. Time's awastin'!"

"Hang on, C.R. We've got a few minor things to take care of. First, I've got to review your training records. Then we have to make sure you know the operating limits of the H-model. Then, of course, we have to brief the rest of the crew, check the flight orders, the FCIF...."

"My gosh!" exclaimed the Harried One, bristling over the myriad of preflight perfunctories. "I thought you people in the Air National Guard went a little lighter on all that official stuff like briefings, training records, FCIFs and the like. Criminently! We'll be all day just filling out paper work," an exasperated C.R. puffed.

"Oh, it's not all that bad," Fabor explained calmly. "But while we 'guard essentials' may *seem* a little more relaxed than you regulars, professionalism is professionalism is professionalism, and it's the name of the game here just like it is back at McMac. Now let's have a look at those training records." After perusing C.R.'s bulging two-volume testament to ineptness, contrasted with Sam's slim, trim unbroken record of Q-1s, Fabor gave them both a quiz on H-model particulars. As usual, Sammy easily breezed through the grilling, while his mentor barely squeaked by with a marginal score.

"Just like old times, eh C.R.," jibed Snake, obviously recalling the Rotund One's past near-failures. "Now before we go out, remember these Herks have the Dash-15 engines. It's gonna be cool today, so watch the torques real careful now, you hear?"

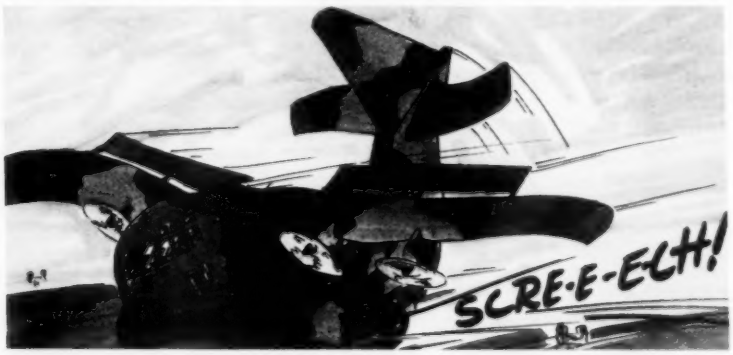
C.R. nodded meekly, his thoughts on grits and coffee instead of aircraft limitations.

A short time later, and after several abortive attempts at starting engines, the Herky Honcho and the ANG crew taxied onto the active runway. C.R., it appeared, seemed intent on trying to start the number

three engine with the number one starter button and the number two engine condition lever. In fact, it was only after Fabor had physically placed the Misguided Mentor's hands on the appropriate controls that the engines sprang to reluctant life.

"Now pilot," began the IP in the right seat, "I'm gonna forget about that starting engines fiasco back there in the chocks. I'm going to calm down and start over. Now, what are the engine limits again?"

C.R. cleared his throat nervously and began a hesitant monologue on the dash-15 engine's operating limitations. "Uh, lemme see. We're looking for 16,900 on the torque, 1094 on the TIT, and, uh, 100.2 on the



RPM...." Snake shook his head resignedly. It was going to be a long day.

"Forget it, C.R. You just take off. The engineer and I will monitor the gauges," Fabor said in exasperation. "Pug 51 is ready for takeoff."

"Pug 51, winds calm, cleared for takeoff."

"Pug 51, cleared for takeoff," confirmed Fabor. "Okay, pilot. *Gently* on the throttles." But the words fell on deaf ears. C.R. simultaneously released brakes and jammed the throttles forward in one continuous motion, the throttles hitting the stops in well under a second. Before Snake or the engineer could get their hands on the levers, though, the overpowered, lightweight Herk leaped forward a hundred feet as the torque meters wound rapidly past 20,000 inch-pounds of torque.

"Reject! Overtorque on all four," yelled the engineer, frantically fighting the acceleration forces and reaching for the throttles. Fabor, meanwhile, fought C.R.'s death grip on the throttles in an effort to bring the galloping C-130 under some semblance of control.

"Copilot's airplane!" he commanded. "Let go of the controls, pilot." C.R., finally getting the message, relinquished control of the now over-torqued Herk and let the IP have the plane. Fabor instantly reversed all four props and reined in the runaway Herk, stopping it briefly on the runway to check for damages. Except for a severe case of four-engine over-torque, there were none—luckily.

After they had parked the aircraft and debriefed a thoroughly miffed crew chief on the plane's condition, Fabor and C.R. ended up in the squadron's stan-eval office for a private "counseling" session.

"Now C.R.," began Snake slowly, "I don't want you to think I don't like you, 'cause you know darn well I do." He paced calmly from side to side of the tiny office, towering over the suddenly-meek field grade officer seated beside the desk. "But you know that was a shabby performance out there today. Have you got anything to say for yourself before I make my recommendations?"

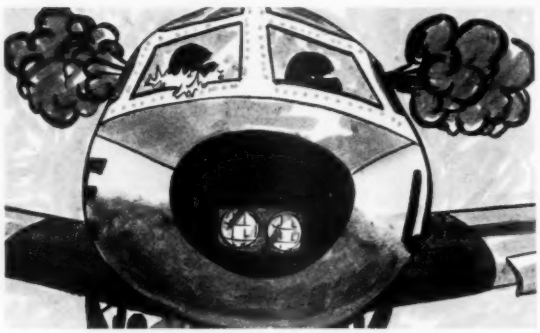
The Addled Aeronaut shook his head dejectedly. "Not a thing, Snake old boy. Not a thing."

"In that case, C.R., I'm recommending that you receive 40 hours of supervised instruction by none other than MAC's deputy director of standardization. Then, you're going to get an additional 40 hours of simulator time over and above what was required for your requal. Then, if you're lucky and receptive to all that training—and only after you've passed the simulator checkride I myself am going to give you—then and only then will I allow you back in one of my airplanes. Any questions, C.R.?"

"Just one, Snake old bean," replied C.R., incorrigible to the last. "Filling out all this paperwork has given me a real down-home, old South appetite. Got any grits on you?"

Snake reddened noticeably, clenching his teeth. "No, C.R., I don't have any grits. All I have is some day-old fried oysters. Personally, I *hate* grits!" ★

Quick Stoppers



Instant Replay

An uneventful departure turned into a double divert for the crew of a CT-39 late last fall. On initial climbout passing FL 220, the pilot turned on the windshield anti-icing system while the slightly chilly copilot turned on his foot warmer. Both pilots were startled when smoke and a burning odor erupted from the vicinity of the copilot's instrument panel. Turning off both switches quickly stopped the smoke which soon dissipated. Wisely, the pilots decided to return to their departure base.

Once on the ground, it took the maintainers only a few minutes to locate the problem. A loose screw in the window support above the right forward windshield was grounding to a wire in the windshield anti-icing system. With the problem fixed and all systems back to normal, the Sabreliner crew departed again.

Passing 8,000 feet, the pilot again selected windshield anti-ice, with an instant replay. This time an electrical arc occurred on the right forward windshield support. Again turning off the system, the crew made another unplanned divert to the departure base.

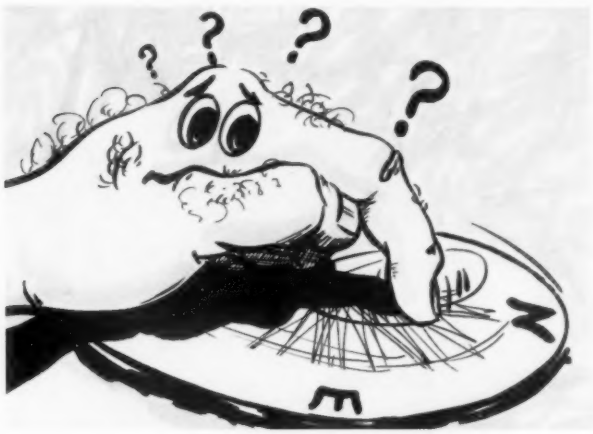
This time the copilot's forward windshield had to be replaced. Apparently the initial grounding problem damaged the windshield internally which, in turn, caused the second incident. Sometimes it's just not your day.

Where Are We?

Level at cruise altitude, the C-130E crew confirmed their position and busied themselves setting up the nav gear for the overwater flight. They decided to fly with the autopilot radio beam coupler switched to range-loc and the flight director mode selector in doppler mode. Imagine their shock when only 21 minutes later they found they were 72 miles off course.

A quick check of the heading instruments revealed the problem. The numbers 1 and 2 compasses were off by 81° and 80° respectively, when compared with the actual magnetic heading. The compasses were then manually slewed to the correct magnetic heading and appeared to operate normally for the remainder of the flight.

Maintenance submitted both N-1 compass amplifiers and the magnetic azimuth detector for analysis which revealed numerous defects and calibration problems. Apparently, the Herk suffered simultaneous *dual* compass failure which input false data to the doppler computer. Since the aircraft was set up to fly the doppler computer's track, the aircraft deviated rapidly from the intended course.



Pacific Programming

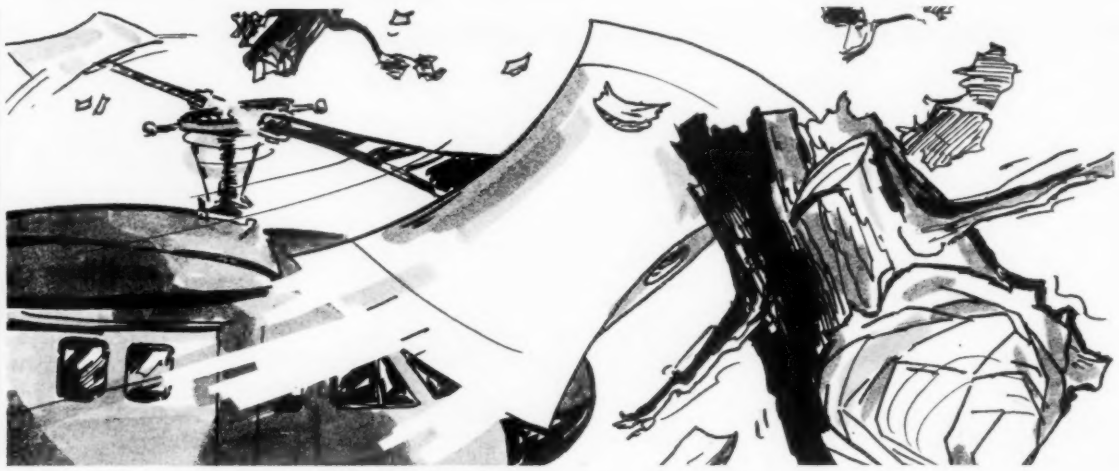
A commercial crew was surprised on a recent flight to Honolulu when the INS auto-coupled aircraft made an unreasonably large heading change when passing over one of the programmed waypoints. The crew checked the "TO" waypoint and it indicated 29°00.0' South instead of the correct 29°00.0' North which had just been checked some 13 minutes earlier. After reprogramming the correct coordinates, the crew continued their INS flight to destination with no problems. Troubleshooting found no cause for the malfunctioning INS.

Cathay Pacific— *Flight Safety Review*

Engine Change X 2

Following a number 4 engine change at an overseas location, the C-5 maintenance folks wet motored then ran the new engine with no discrepancies noted. All checks complete, the Galaxy's crew was alerted to continue the mission. When cleared for takeoff, the crew ran up all four engines only to find the new number four TF-39 would not reach takeoff power without exceeding TIT limits. When the throttles were pulled back, number four compressor stalled, so the crew shut it down and turned the aircraft back to maintenance. Troubleshooting revealed extensive damage to the engine so it was changed—again. The mangled engine was shipped to the home station where teardown revealed the remains of a three-fourths inch screw near the compressor rear frame. Origin of the screw could not be determined.

Quick Stoppers



A Near Disastrous Save

An emergency rescue mission almost turned into a disaster for a UH-1 and its crew recently. The helicopter had been launched to medevac a logging accident victim who had suffered severe head injuries and was located in a remote moutainous area near the 5,500 foot MSL level. Arriving in the area, the crew of the helicopter quickly located the victim and executed an uneventful landing in a clearing approximately 200 feet by 250 feet.

After the patient was on board, the pilot of the Huey hover-taxied to the far end of the clearing and briefed a level acceleration maximum performance takeoff. The takeoff, however, was complicated by two 30-foot high trees directly in the path of the departure course and 250 to 275 feet from the helicopter's takeoff position.

The pilot initiated the takeoff by lowering the nose and adding collective to 100 percent torque, then applying aft cyclic to climb once translational lift was attained. When the climb began, the pilot added additional power to climb above the trees. The Huey managed to clear the first tree, but the main rotor blades struck the second tree approximately three feet from the top, severing small limbs approximately one and one half inches in diameter. Noting no ususual noise or vibrations, the crew continued on their mission of mercy and flew their critically injured patient to a hospital helicopter landing pad.

After engine shutdown, the crew discovered damage to both main rotor blades consisting of tears and creases in the honeycomb and bottom skin of the blades. There was no other damage.

Notable Quote

It is impossible to make anything foolproof because fools are so ingenious.

After Deadlines

1983 FLIGHT SAFETY RECORD BEST IN HISTORY—The Department of Defense announced in late January that the Air Force recorded the best flight safety record in its history in 1983. Marking the third consecutive year of significant improvement in the overall mishap rate, the 1983 DOD Class-A mishap rate of 1.73 mishaps per 100,000 flying hours beats the 1982 rate of 2.33. Air Force safety officials noted the Military Airlift Command mishap rate for 1983 was better than that of many commercial, passenger carrying aircraft. (MAC's rate of .40 was the best in the command's history and the lowest rate for any Air Force MAJCOM in 1983.) Other notable accomplishments included a Class-A mishap-free year for the C-141 fleet and the first Class-A mishap-free year for USAF helicopters since 1960.

NIGHT HAWK HELICOPTER ROLLED OUT—The first Air Force HH-60D Night Hawk combat search and rescue helicopter recently made its debut at the United Technologies' Sikorsky Aircraft Facility in Stratford, Connecticut. Aerial refuelable and equipped with advanced avionics systems, the Night Hawk will be utilized by the Air Force in both special operations and combat rescue roles. For more information, see Oct 83 ***TMF***, "HH-60D Night Hawk." Courtesy ASD/PA.

C-5 REWING PROGRAM AT FULL SPEED—With the delivery of the 15th production rewinged C-5A, the production line at Lockheed-Georgia Company is now operating at the maximum programmed rate. The line will be turning out rewinged Galaxies at the rate of 1.5 per month through 1987. All 77 C-5As will receive new wings under this program.

MAC HAS NEW MOTTO—In case you hadn't heard, MAC has a new motto. It replaces the venerable **"Global in Mission—Professional In Action,"** which has served the command well over the years. The new motto emphasizes MAC's emergence into the forefront of enforcing our national policy, in protecting national interests and in fostering confidence between the United States and our Allies. As General Thomas M. Ryan, Jr., CINCMAC, put it, "Our new motto, **'MAC—The Backbone of Deterrence,'** captures in a few words the powerful presence of all facets of the Military Airlift Command in the defense of liberty."

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SPECIAL OPS -- C-5 STYLE